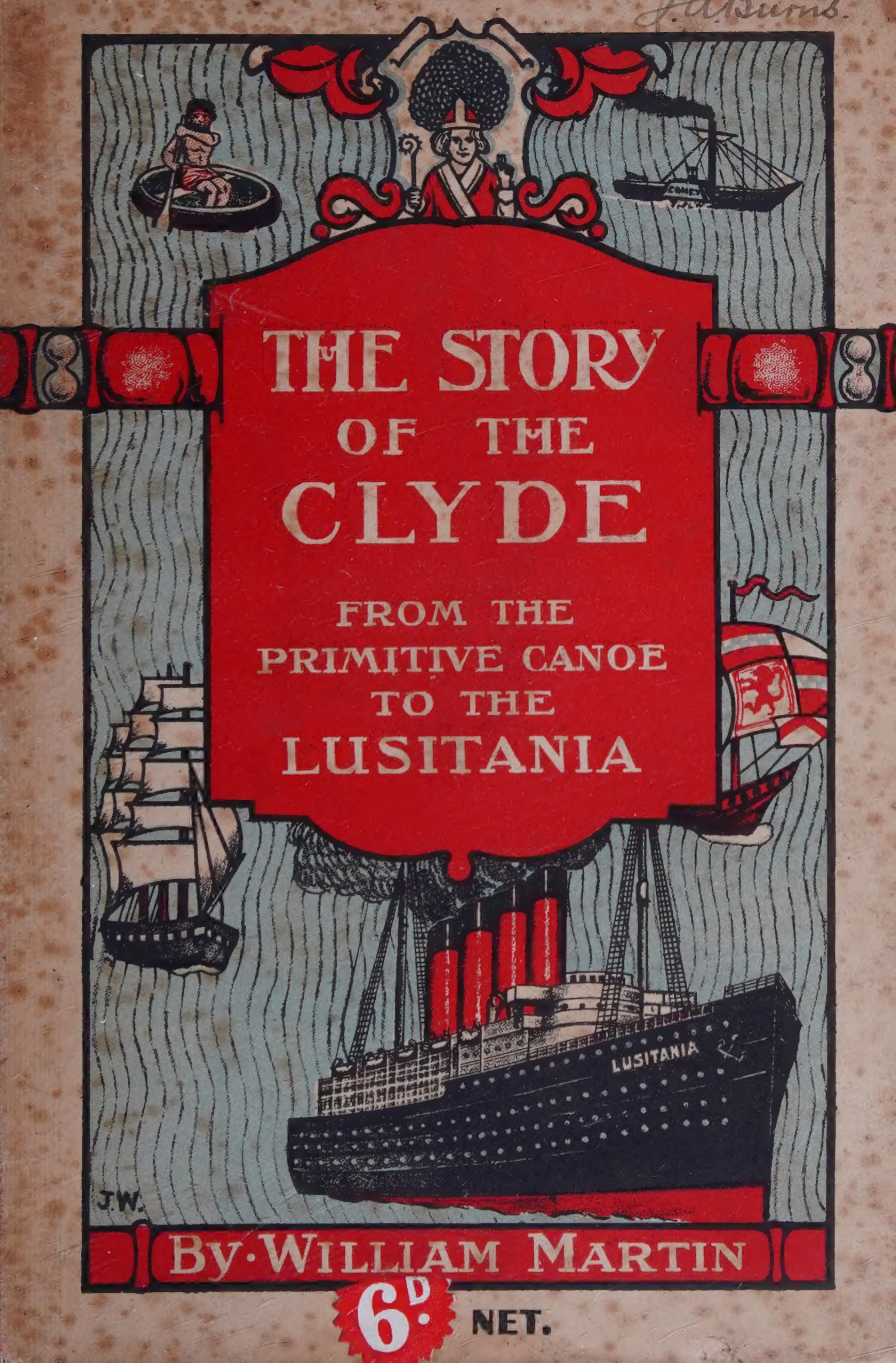
THE STORY
OF THE
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FROM THE
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TO THE
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J.W.
By·WILLIAM MARTIN
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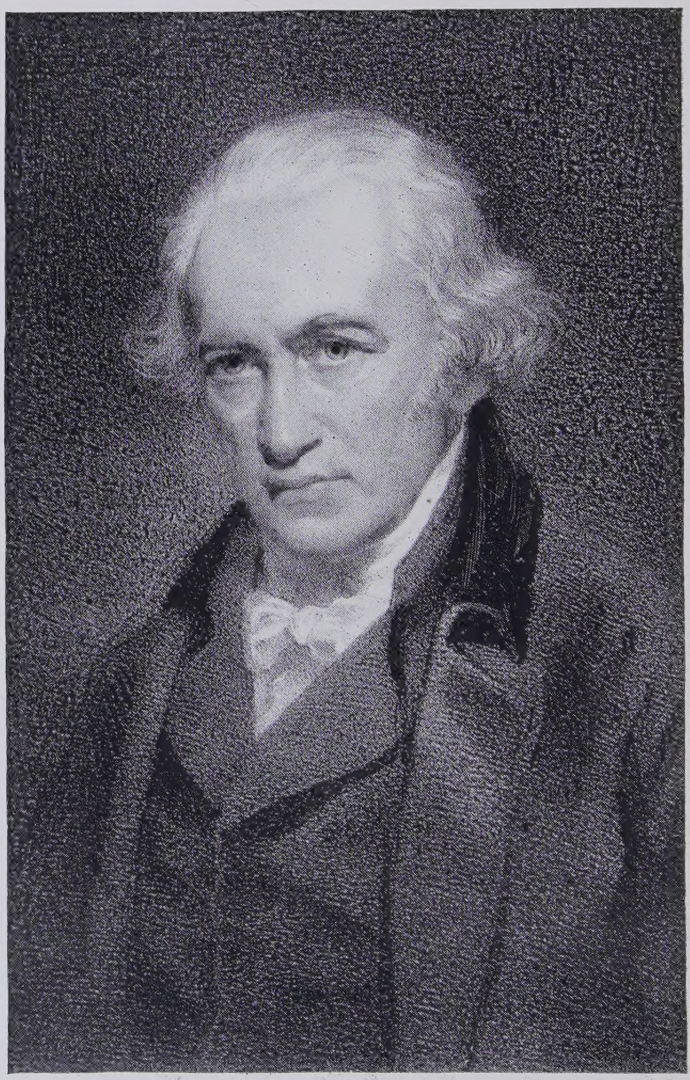


JAMES WATT.

THE STORY OF THE CLYDE.

FROM THE PRIMITIVE CANOE TO THE "LUSITANIA."

BY

WILLIAM MARTIN.

GLASGOW:
THE GRANT EDUCATIONAL CO., LTD.

"THE STORY OF THE CLYDE" was delivered as a lecture to the Members of the Old Glasgow Club. It is published by request, and is dedicated to Sir THOMAS MASON, D.L., Chairman of the Clyde Trust.

ERRATA.

Pp. 15 and 25, for Dumbreck read Dumbuck.

P. 33, for Clyde, should read Forth and Clyde Canal.

NOTE.

P. 41, Morris refers to the *Comet* as having 10 to 15 H.P. She really had only 4 H.P.

THE STORY OF THE CLYDE.

THE CLYDE is 98 miles long, and has its rise in a beautiful pastoral region, known, alas, to a very limited number of Glasgow citizens. It might be within the mark to say that for one son of St. Mungo who has visited the hills around Elvanfoot, a hundred are familiar with those of Cowal and Renfrewshire, which stand where the river flows into the sea. Many writers have dwelt on the charms of this upper region, but we know of no passage more worthy of quotation as a description of that calm, peaceful country than this published in 1876 :—" The hills around Elvanfoot belong to the same general age as those of the Northern Highlands, but the scenery here is peculiarly different from that conventionally associated with mountains. What a marked contrast is presented by these long and gently swelling slopes, soil-covered even to their summits. After a passage along the Biggar Valley,

the river slowly glides in a serpentine course around the roots of Tintoe, and in its windings for many miles flows through a track of beautiful meadows and richly cultivated banks. Its waters, as they roll over a bed consisting of hard gravel with occasional rocks, are clear and deep, and the stream only resumes its former appearance on approaching the Parish of Lanark."*

The river has many points of beauty apart from the landscape through which it flows. The various falls are noteworthy. Bonnington Linn, Stonebyres Linn, and, most famous of all, Cora Linn, 84 feet in height, and, to quote Gillespie again, "The raging water, towering rocks and overhanging trees, form a scene of rare magnificence."

"Oh! sight most varied and magnificent,
Well may the Scot who looks down thus upon
His native stream of flood, and tumbling foam
Of hanging rock and wood, on snowy Fall
Uplit with triple arch, and round upon
This leaf-decked gorge, gold flashing in the sun,
With ecstasy exclaim, 'No longer shall
A foreign shore entice my feet to stray
In search of Nature's best, for not a scene
Can shine upon mine eyes with peaceful view,
More stirring, or with thought more full than bursts

* "Glasgow and the Clyde," by Robert Gillespie. Forrester, 1876.

Upon me now, and now I know that not
The distant scene is richest to the mind,
But that which is for ever in our midst,'
And well may he exclaim on such a scene,
For of the Falls which beautify this stream,
Not one more varied is, more picturesque,
More grand than thunderous foam-lit Cora Linn." *

In June, 1492, Archibald Bell-the-Cat, Earl of Angus, suspected of treason, was forced by James IV. to exchange his Castle of Liddesdale for that owned by the Earl of Bothwell. "High on a grassy headland, commanding with its massive towers, two reaches of the protecting Clyde, stands Bothwell Castle. And there is still beauty of form as well as of colour in moulding and arcade above, and in the sweeping lines of the Clyde far below."

In his "Select Views on the River Clyde," published in 1830, Leighton says that the Clyde takes third place among the rivers of Scotland, but that when we consider the mineral, manufacturing, and commercial importance of the district, and the energy, activity, and ingenuity of the inhabitants, it is probably entitled to be regarded as the most important of Scottish streams. "The beauty of its scenery is not more remarkable than its great

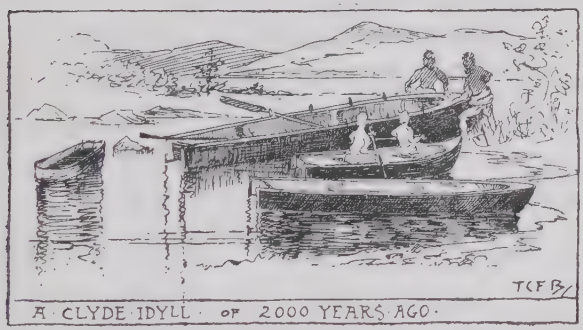
* "The Falls of Clyde and other Poems," by Robert Bird.

variety. On its banks every taste will receive gratification, from those who love to see nature in her wilder forms of the mountain and cataract, to those who take delight in her softer moods, and love the pastoral valley, or the cultivated beauty which usually surrounds a manorial residence." While Neil Munro in his recent work calls it " the most astonishing, beautiful, and inspiring of Scottish waterways."

But it is not with the Clyde as a stream, by which our local bards have sat and mused in verse, that we are here chiefly concerned. It is as the great highway for shipping, carrying the name and fame of Glasgow over the whole world, that we chiefly regard it. The discussion, so often revived, as to whether the Clyde made Glasgow, or Glasgow the Clyde, may be left to the big gooseberry season. Suffice it to say, that there would have been no Clyde, as we know it to-day, but for the foresight, skill, and enterprise of Glasgow men.

The opening words of Sir James Marwick's work on " The River Clyde and the Harbour of Glasgow," published in 1898, are very significant. " Previous to the latter half of the eighteenth century the Clyde was practically what nature had made

it, and was so shallow as to admit only of the passage of boats and small vessels." It is well to dwell on these words of the late Town Clerk. They mean that up till a century and a-half ago the Clyde as a navigable stream was just what it had been since the earliest recorded time. We can go back in imagination to this



early period, for while to-day "the stately liner and slouching tramp go splashing seawards or home again," in those primeval days the canoe of the hardy Briton was the fore-runner of the twentieth century liner.

In 1879 one of these vessels was found in the bed of the river—one of some 25 that have been preserved—all of which except one were found to be cut out of single trunks of oak, and Dr. John

Buchanan, in his "Glasgow, Past and Present," states that 18 canoes were discovered previous to 1856. These were brought to light in various parts of the river, but the interesting thing to note here is that one was found as far away from the present bed of the river as Drygate. There may be seen in the Hunterian Museum a canoe found at Springfield Quay, 19 feet 4 inches in length, 30 inches deep, with a breadth of $3\frac{1}{2}$ feet at the stern and 2 feet $9\frac{1}{2}$ inches at the centre, while another, 11 feet 10 inches long by 2 feet in breadth at the stern, lies in the Andersonian Museum. The largest primitive vessel of this type found in the Clyde valley measured 29 feet in length, 5 feet across the stern, being 3 feet 4 inches deep at the stern, and 2 feet 2 inches in the centre. Four rowers manned her, sitting 2 feet 7 inches apart.

Even in those far-off days the up-to-date character of the Clyde boatbuilders was manifest, for while the ancient Briton was satisfied with a boat constructed of wickerwork, covered with hide, the native of the Clyde valley built his vessel of oak.

The question has been discussed, did these early boatbuilders know the use of iron? It is extremely improbable, for the weapons of the period were

of stone, a stone hatchet having, indeed, been found in one of the canoes, while no iron was found as part of the structure of any of them.

We have to go back to a charter by King William the Lion, granted between 1175 and 1178, for the first record of rights to the River Clyde, which were conferred on Bishop Joceline and his successors.

Herring and salmon were the earliest staple exports. In 1564 this trade had become so extensive that 1,700 lasts or 20,000 barrels were exported to Rochelle alone ; and at the beginning of this century—the sixteenth—900 boats were fishing in the Firth of Clyde above the Cloch.

In 1656 Tucker, Cromwell's Commissioner, reports that "some to Ireland with small smiddy coal carried in little vessels of 4 to 10 tons burden, others to France with plaidings, coal, and herrings, from which the return is salt, pepper, raisins, and prunes ; others, again, to Norway for timber."

In 1692 the Commissioners of the Convention of Burghs found that the export and import trade was of an annual value of £17,083 6s. 8d., and that the city merchants owned 15 vessels, measuring 1,182 tons, of a total value of £3,877 15s. $6\frac{2}{3}$d. sterling.

In 1727 Defoe, writing of the Clyde merchants, says, "They now send near 50 ships of sail every year to Virginia, New England, and other Colonies in America."

At the time of the American War Glasgow equipped 14 privateers to defend her King and trade.

The Seal of Bishop Joceline.

The subject of fishing rights in the river carries us a long way back in the history of the city. Bishop Joceline (1175-79) gave to the Knights Templars a toft in the burgh, and the fishing of one net in the Clyde, and this toft, according to Renwick,

"seems to be identified with the property on the west side of Stockwell Street, which in the sixteenth century is traced in the possession of the Knights of St. John, successors of the Templars. These military orders may have exercised their fishing rights through dependents occupying the toft dwellings, but, though it has been conjectured that Stockwell Street got its original name of Fishergait on account of its being chiefly occupied by fishermen, there is no direct evidence that any of the residenters belonged to that class." The Stockwell was probably the fore-runner Renwick says of that "fine fountain" at the Broomielaw, which in M'Ure's time supplied water to "all the boats, barges, and lighters' crews that arrives at the harbour from Port-Glasgow and all other vessels which come from the Highlands and far-off Isles of Scotland."

We get a glimpse into the shipping trade on the Clyde in the first half of the sixteenth century from the protocol book of Matthew Forsyth, Notary Public, where reference is made to a ship called the *James*, of Dumbarton, the property of the Earl of Arran, which had captured gold, silver, hides, woollen cloth, and pickled salmon on the coast of England.

In 1596 we learn of a trade between France and Dumbarton. Forty years later King Charles I. granted a charter under the great seal, in which he makes generous acknowledgment of the shipping enterprise of Glasgow citizens, and grants to the city "the freedom of the river on either bank, from the bridge to the Clochstane, with freedom and immunity for roadsteads between these points, for loading and unloading imported and exported goods. This charter also constituted the magistrates justices of the peace, not only within the city and its freedoms, but also within the ports of Inchgreen, Newark, and Pot of the Rig, and empowered the burgesses and inhabitants to build ports and roadsteads, bulwarks, and jetty heads, to render the river more navigable between the bridge and the Clochstane, and for the reception of ships, boats, and vessels within the bounds as far as the spring tide flowed. . . ." The charter was confirmed by Parliament in 1641, 1661, and 1669.

At the close of the sixteenth century vessels owned by citizens were engaged in a carrying trade, which embraced France and the Highlands. The tonnage of these ranged from 23 to 92 tons, and yet these small craft could not get up the

river beyond Dumbarton or Dumbreck ford. When they did on rare occasions reach Glasgow they were, according to Macgregor, discharged by porters wading ashore with the cargo on their backs.

Shipping, in the modern sense of the word, may be said to have come into existence with the opening of a Customs House, in 1639, at the foot of Stockwell Street.

In M'Ure's "View of the City of Glasgow" there is one reference only to the shipping of the port, but it is a very significant one. It is as follows:—"Since the Revolution" (that is, between 1688 and 1736, a period of only 48 years) "the merchants here have lost upwards of one hundred sail of ships, some seased by the French and other nations abroad, and others lost by violent storms at sea, that thereby many of our neighbours were ruined, and might say, with patient Job :—

> "Versa est in luctu cythara nostra
> Est organum nostrum vox flentium."

The whole development of Clyde shipping may be summarised in these figures :—

1656.—Revenue from imports and exports, £554.
1910.—Revenue from imports and exports £287,384, and a total revenue from all sources of £555,403.

The growth of trade in the river determined the Council taking an important step in 1662, when they resolved, "for many guid reasons and considerations for the more commodious ladening and landing of boats that there be ane little key builded at the Broomielaw," at a cost of £166 13s. 4d., and it was at this time that an enlightened Council advised the Dean of Guild to "try for oaken timber either in the Hie Kirk or back gallerie."

The history of bridges on the Clyde takes us back to the thirteenth century, and probably earlier. In a document bearing date 1285, houses in Fishergait are mentioned as being situated beside the bridge of Clyde.

Bishop Rae's Stone Bridge was erected opposite what is now Stockwell Street in 1345, and lasted till 1850, but mention is made in a charter in 1285 of the Pons de Cluds, in all probability a timber bridge.

In 1571 the Town Council got powers from the Crown to place an impost on herring and other fish, to enable them to keep in a proper state of repair Glasgow Bridge, which was old, and in a decayed condition.

Glasgow Harbour One Hundred Years Ago.

Passing on to 1672-3, we find a reference made in the accounts of the Common Good to heavy expenses in connection with the repairing of Glasgow Bridge, and the construction of a harbour at Port-Glasgow.

In his "Glasgow Memorials," Mr. Renwick, to whom we owe so much of our knowledge of the past of our city, tells us of a use to which the river was put in those early days in the punishment of offenders :—"On 21st March, 1587 or 1588, two women were sentenced to be 'cartit and doukit' on the following Monday, and till then in the steeple. About the end of 1588 'ane common cart,' in which to parade offenders, was ordered by the Session, and both at this and other times is not unfrequently ordered to be 'cairtit, doukit, and banesit the town for ever, or to be cairtit through the toun and doukit in Clyde or ellis to pay xl. s.'"

The eighteenth century in Glasgow was the time of the Tobacco Lords. Speculation in the fragrant weed ran high. Senex tells us the following story of those stirring times in the commercial world in Glasgow :—

"When the American War of Independence broke out about 1776, tobacco from 3d. per 1 lb.

suddenly rose to 6d. per 1 lb. On this occasion Mr. William Cunningham (who built the original house of the Royal Exchange) called on Mrs. Rankin, as a friend and an old acquaintance of the family, and strongly advised her to lay in a stock of tobacco forthwith, as he was sure that there would be a still greater rise of the tobacco market. Mrs. Rankin, however, hesitated to speculate upon an article which had already risen to double of the ordinary price. Mr. Cunningham, notwithstanding her objections, still urged her to purchase a few hogsheads, when she at last, rather unwillingly, agreed to buy one hogshead, but she refused to enter on any greater purchase, considering the risk to be too great. She had scarcely concluded the bargain when tobacco rose to 9d. per lb., then to 1s., and thus continued to rise step by step till at length it reached the extraordinary price of 3s. 6d. per lb., so that ultimately by manufacturing this single hogshead of tobacco Mrs. Rankin cleared £1,500. Mrs. Rankin's eldest daughter, Janet (sister-german of Mr. James Rankin), was married to Humphry Ewing, Esq., the brother of Walter Ewing Maclae, Esq., of Cathkin, and uncle to James Ewing, Esq., of Strathleven."

The Clyde, while now becoming a main source of the wealth of Glasgow, was also the cause of many troubles to our forefathers, for in 1782 and 1795 floods of a most disastrous character were experienced. Boats were plying through the Briggate, while the arches of the recently erected bridge over the Clyde at Saltmarket fell in.

We read in the *Scots Magazine* of 14th March, 1782, that hundreds of families were compelled to quit their houses, while great losses were experienced through large quantities of tobacco, sugar, and merchandise being carried away.

These trying experiences were relieved by a humorous interlude, for which we are indebted to Senex.

"Amidst all these distressing occurrences," says Senex, "there happened one so comic, that its recital by tittle-tattlers of the day made people almost to forget the general calamity caused by the flood. It seems that David Dale, Esq., whose house was situated at the foot of Charlotte Street, had invited a large party to dinner on the said 18th day of November, 1795, and expected William Simpson, Cashier of the Royal Bank, the great Millionaire, Gilbert Innes, of Stowe, and the whole

posse of the Royal Bank directory, to come from Edinburgh to meet Scott Moncrieff, George M'Intosh, and a few others of our Glasgow Magnates at dinner on the said day. On the memorable morning of the said 18th, all was bustle and hurry-burry in Mr. Dale's house, preparing a sumptuous feast for this distinguished party. The kitchen fires were in full blaze, prompt to roast the jolly joints of meat already skewered on the spits, to boil the well-stuffed turkeys, and to stew the other tit-bits of the table; while the puddings and the custards stood ready on the dresser for immediate application to the bars of the grate; when, lo and behold, the waters of the Clyde began gently to ooze through the chinks of the kitchen floor, and by and by gradually to increase, so that in a short time the servants came to be going through their work with the water above their ankles. At this critical moment the Monkland Canal burst its banks, and, like an avalanche, the waters came thundering down the Molendinar Burn, carrying all before it, and filling the low houses of the Gallowgate, Saltmarket, Bridgegate, and under portions of St. Andrew's Square, with a muddy stream, and the wrecks of many a poor man's dwelling. In

consequence of the regorgement of water caused by this sad mishap, and the continued increase of the flood, the Camlachie Burn, which ran close by Mr. Dale's house, was raised to an unusual height, and at once, with a confused crash, broke into Mr. Dale's kitchen, putting out all the fires there, and making the servants to run for their lives, they having scarcely had time to save the half-dressed dinner. Then came the great question, What was to be done? The dinner hour was fast approaching, and the great Edinburgh visitors were already whirling rapidly towards Glasgow in their carriages; while the fires of the kitchen being completely extinguished, the kitchen itself was thereby rendered totally useless. In this calamitous dilemma, Mr. Dale applied to his opposite neighbour in Charlotte Street, William Wardlaw, Esq. (Dr. W.'s father), for the loan of his kitchen, and also to another of his neighbours, Mr. Archibald Paterson, for a like accommodation, both of whom, not only readily granted the use of their kitchens, but also the aid of their servants to cook Mr. Dale's dinner. But still the question remained, How were the wines, spirits, and ales to be gotten from the cellar, which now stood 4 feet deep of water? After

much cogitation, a porter was hired, who, being suitably dressed for the occasion, was to descend to the abyss and bring up the said articles. It, however, occurred to Mr. Dale that the porter would not be able to distinguish the bings that contained the port, sherry, and Madeira (Mr. Dale did not sport French wines) from those of the rum, brandy, porter, and ale. In this emergency Miss Dale, then sixteen years of age, was mounted on the porter's back, and both having descended to the cellar, Miss Dale, amidst the waters of the deep, pointed out to her chevalier where he was to find the different articles required for the table. After having received instructions, the porter brought up his fair charge to the lobby of the house, where Miss Dale dismounted from the shoulders of her bearer in safety; and the porter, having again descended to the cellar, readily found the wines and ales that were wanted, which he delivered to Mr. Dale in good order. All things now went on in a satisfactory manner. The Edinburgh visitors and Glasgow Magnates arrived in due time, the dinner was cooked and placed on the table in the best style, and the whole party passed the evening in mirth and jocularity at the odd circumstances which had attended this merry meeting."

Long before this period Glasgow had been moving in the matter of the improvement of the river for trade purposes. "In 1566," says Deas, "the first crude attempt was made to improve the river by detachments of the inhabitants of Glasgow, Renfrew, and Dumbarton endeavouring to open up a formidable sandbank at Dumbreck above Dumbarton, at which they laboured for several weeks, residing during the time in temporary huts built on the river banks."

We read that on 15th October, 1605, the Water Sergeant was enjoined, in the words of Mr. Deas, "not to suffer stones or ballast to be cast out of boats and barks in the river or on its sides, and to prosecute such persons as did so before the Bailies."

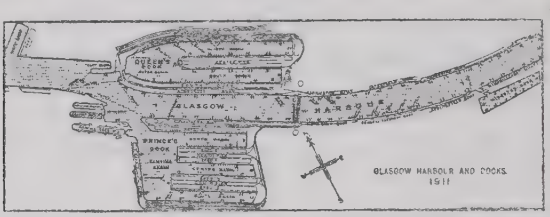
Up till 1658 vessels bound for Glasgow were, owing to the shallowness of the river, compelled to load and unload at Cunningham, in Ayrshire.

On 5th October, 1667, an entry was ordered by the Town Council of each vessel entering the harbour.

In 1668 an offer was made to the Town Council of Dumbarton to construct harbour works there, but the worthies of Dumbarton declined the pro-

posal, their reason being that "the influx of mariners would tend to raise the price of butter and eggs to the inhabitants."

We are now, in the twentieth century, getting down towards Dumbarton with our dock accom-



modation, and it may be that the Dumbarton worthies will show a more enlightened spirit when the time comes to renew the proposal.

In the same year (1668) the city obtained a Crown Charter of Confirmation by Charles II. for the erection of a harbour at Port-Glasgow, where the first graving dock in Scotland was formed.

Twenty-six years later the Council erected a further quay at the Broomielaw. This was extended, and by 1772 the Provost reported to the Town Council that he and other magistrates had brought the subject before the Merchants' and Trades' Houses, and that the latter had agreed to give £10,000 Scots to the undertaking, and would

make further grants from time to time as the work proceeded.

In 1755 there were twelve shoals between Glasgow and Renfrew, the two most difficult to deal with being at Pointhouse Ford, where the tide was 15 inches at low tide, while between Dunglas and Dumbarton there was the ford of Dumbreck, which, when surveyed by Watt in 1769, had only 2 feet depth of water at ebb tide, while only 3 feet of water was found for 600 yards up and down the river at this point.

On 3rd September of this year Smeaton reported on the work of deepening the river, and proposed the construction of a lock and dam at Marlin Ford, 4 miles under Glasgow Bridge, so as to secure 4 feet 6 inches of water up to the Quay of Glasgow.

About this time powers were also got to deepen the river for purposes of navigation from Dumbreck Ford to Glasgow Bridge. In all these matters the Town Council had the advice of John Golborne, of Chester (1768), a name famous in the world of engineering, and a year later of one more illustrious, James Watt. Watt was succeeded by Rennie (1799), and Telford (1806). How slow this process of dredging was may be gathered from the fact that,

when the "Comet" commenced to ply in 1812, drawing only 4 feet, the vessel had to sail from the harbour both at Glasgow and Greenock at high water to avoid grounding.

In 1840 the management of river affairs passed from the Town Council to the Clyde Trust, whose jurisdiction extends to a line from Newark Castle to Cardross Bank, where Robert the Bruce died at his castle on 7th June, 1329. The jurisdiction of the river below this is in the hands of the Clyde

Drawing the Salmon Nets at Govan.

Lighthouse Trustees, which extends to Whitefarland Point. The Clyde Trustees also own and manage the harbours of Glasgow and Renfrew, the Clydebank Dock, and Bowling Harbour. There are three other harbour authorities on the river—

the Dumbarton Harbour Trust, the Port-Glasgow Harbour Trust, and the Greenock Harbour Trust.

The history of the nineteenth century is that of a succession of Acts giving further powers to the Clyde Trustees to carry on their work, until at the present time we have a depth at low water at spring tide of 23 feet, which will shortly be 25 feet, and a high-water depth of 35 feet, and this, be it remembered, in a river which from a mile below Bowling upward to Glasgow, a length of 12 miles, is nearly as much artificial navigation as the Suez Canal.

The following figures are eloquent of the growth of the river :—

	Revenue.
1861,	over £100,000
1877,	over £200,000
1888,	over £300,000
1896,	over £400,000
1904,	over £500,000
1910-11,	over £577,000

"If," writes the eloquent author of "Glasgow in 1901," "you compare Glasgow with other large ports, perhaps its most distinguishing feature is

the comprehensive nature of its trading. The liner *de luxe*, as Liverpool people understand her in the *Oceanic*, or the *Campania*, or the *St. Louis*, is not to be seen on the narrow Clyde; and the Cardiff man, accustomed to his miles of coal traders, will find disappointment here; still, if you were to spend a diligent morning in the docks, you will find few types of the British mercantile marine amissing. The Transatlantic passenger steamers of the Allan and Anchor firms, the strange East-Coastish lines of the Donaldson carriers ('lines like a hat box,' as an old skipper had it), the queer-shaped turret ships of the Clan Company, which look as though they had swallowed much more cargo than they could digest, the big bright-funnelled South African traders, bristling with derricks and Samson-posts; the China Mutual steamers, with their names in the script of Far Cathay on their bows; the Loch Line sailing ships, which clip Australian records every season as keen as any 'greyhound of the Atlantic'; the four-masted Frenchman from New Caledonia; the teak-carrier from Rangoon; the auxiliary screw, laden with seal oil and skins, from Harbour Grace; the nitrate barque from Chili; the City steamers from India

and the Persian Gulf—you find them all. Then there are the squadrons of tramps, which thrash from Bilbao to the Clyde with ore, and back again with coal; the Italian fruit boats; the stout Cross-Channel packets; the Highland steamers, and top-sail schooners, which congregate in the Kingston Dock."

The story of the Clyde embraces all the towns on the navigable part of the river. Much that is interesting and instructive in this connection might be written of Renfrew, Dumbarton, and Port-Glasgow, but the limits of this work will admit of only a glance. One town, however, claims more than a passing notice. In no town has the growth of the river been more illustrated than in Greenock. From Dr. Leyden we learn that—

> "That grey town
> That pipes the morning up before the lark
> With shrieking steam"

in the beginning of the eighteenth century "consisted of a single row of thatched houses, stretching along a bay, without any harbour. In 1707 a harbour began to be constructed," and with the American War the prosperity of the town was assured. It was in 1753 or 1754 that young

Watt, through the death of his mother, or his father's circumstances—perhaps both—came to Glasgow to reside with his mother's relations. He was then 17 or 18. From thence he went to London, returning to Greenock in 1756. In this year he came again to our city to pursue his business of mathematical instrument maker.

We read in history of the entry of Kings and Emperors into cities and countries. Much of that kind of thing falls into the background in real significance beside the entry of young Watt, aged 21, to Glasgow; for has Watt's discovery not done more than anything else to revolutionise social and industrial life? Mr. George Williamson, who edited "The Memorials of the Lineage, Early Life, Education, and Development of the Genius of James Watt," published for the Watt Club by Constable in 1856, says truly :—

"Watt's arrival in the city . . . with the view of establishing himself as a mathematical and philosophical instrument maker, cannot but be regarded as a notable point in his life. Clouded and unpromising as it was in the outset, it was to open up a train of events, the most propitious to his genius, and in introducing him to the sphere

best of all calculated to nourish and call forth into energy all that yet remained in his mind in a latent or only nascent state, was to prove the pivot or turning point of all his future career."

In 1769 Watt was engaged to survey the River Clyde. His report is dated 20th October of that year. Smeaton, as we have seen, had recommended a system of locks in the river. Watt's scheme was that followed up since with such conspicuous success —viz., the deepening of the channel.

The first square-rigged vessel, *The Greenock*, was brig-rigged and built about 1760, by Peter Love, shipbuilder, Greenock. In 1812—fifty-two years later — an old Clyde skipper is reported to have addressed his crew thus when they passed Henry Bell's celebrated *Comet* on the river —"Kneel doon and thank God that ye sail wi' the Almichtie's ain win', and no wi' the de'il's fire and brimstane, like that splutterin' thing there." The old skipper was only giving forcible and pious expression to a very general feeling among sailors of the time, for sailors are a very conservative race. We have to go back a very long time for the beginning of mechanical power in marine propulsion. Two thousand years

ago the Chinese had paddle boats worked by man power, and some kind of machinery in the form of a winch. The Romans, later on in history, engaged in like experiments. It is not, however, until the eighteenth century that we come to the application of steam power. We read of one called

John Robertson.
(*From a Photo taken 1857.*)

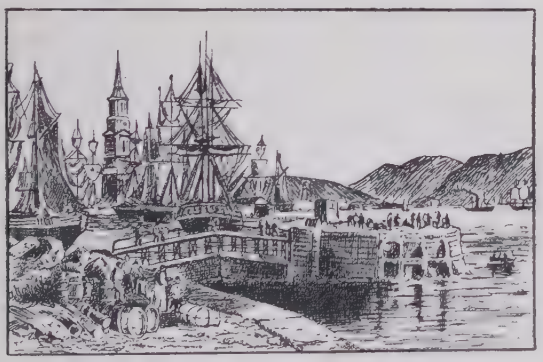
Jonathan Hulls, whose design for a steamboat we have a sketch of. A recent writer says of him—"On the strength of it, the claim has been put forward that he was the actual inventor of the steamboat, but whether the vessel designed was

The Clyde at Bowling.

ever built, and, if so, what success attended it, are matters on which evidence is wanting."

In 1786 William Symington patented a marine steam engine, and sailed on the Clyde the first steamship ever seen in the United Kingdom.

Henry Bell then built the *Comet* at Port-Glasgow, which was launched in June, 1812. She was 40 feet in keel length, 10 feet 6 inches in beam, and 25 tons burthen. The engine was the work of Anderson,



Port-Glasgow in the 18th century.

Campbell & Co., of Greenock, the fore-runners of the famous firm of Caird & Co. The boiler was made in Port-Glasgow, and the cylinder came from the workshop of John Robertson, of Glasgow, and cost £192, so Glasgow, Greenock, and Port-Glasgow may each claim a share in this triumph.

In the *Greenock Advertiser* of 15th August, 1812, there appeared the following advertisement :—

"Steam Passage Boat, the *Comet* between Glasgow, Greenock, and Helensburgh, for passengers only.

"The subscriber having, at much expense, fitted up a handsome vessel to ply upon the River Clyde between Glasgow and Greenock, to sail by the power of wind, air, and steam, he intends that the vessel shall leave the Broomielaw on Tuesdays, Thursdays, and Saturdays, about mid-day, or at such hour thereafter as may answer from the state of the tide ; and to leave Greenock on Mondays, Wednesdays, and Fridays in the morning to suit the tide.

"The elegance, comfort, safety, and speed of this vessel requires only to be proved to meet the approbation of the public, and the proprietor is determined to do everything in his power to meet public encouragement.

"The terms are for the present fixed at 4s. for the best cabin, and 3s. the second, but beyond these rates nothing is to be allowed to servants or any other person employed about the vessel.

"The subscriber continues his establishment

at Helensburgh Baths, the same as for years past, and on the *Comet's* arrival at Greenock a vessel will be in readiness to convey any passengers that intend visiting Helensburgh.

"Passengers by the *Comet* will receive information of the hours of sailing by applying at Mr. Thomas Stewart's, Bookseller, Square; and at Mrs. Blackey's, East Quayhead, Greenock, or at Mr. Houston's Office, Broomielaw.

HENRY BELL.

HELENSBURGH BATHS,
5th August, 1812.

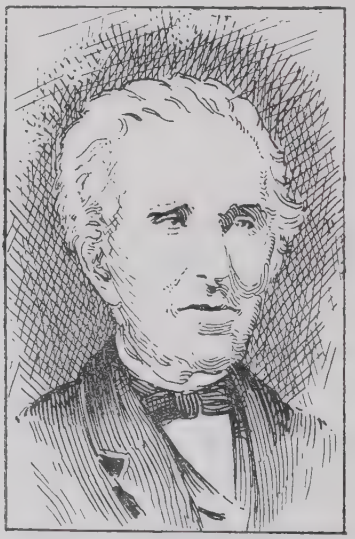
Deas tells us that on one occasion at least, "in consequence of a ripple of head wind," she took four hours to sail from Greenock to Bowling, a distance of 10½ miles.

A year later another steamer, *The Glasgow*, and a third still another year later, the *Morning Star*, were launched, the latter being built for Mr. John Robertson, Engineer, Gorbals.

It is just a hundred years since the construction of the *Comet* was commenced. John Wood, the builder's yard, is now part of the works of Robert Duncan & Co., Port-Glasgow.

According to the latest opinion, the vessel was

launched on the 24th day of July, 1812, and, as we have seen, she was on the berth by the following month. The *Comet* sailed for about $8\frac{1}{2}$ years, coming to an end by stranding on Craignish Point in December, 1820, while returning in heavy weather from Fort-William, which run to the West Highlands she had been making for some time.



John Wood, the builder of the *Comet*.

A recent writer informs us as to the wages paid to the officers and crew, from which we learn that Captain Bain had 30s. weekly, over the year, the engineer 18s. when on duty and 12s. when off.

We have still with us, in Dr. John Inglis, a connecting link with those old days, for this eminent engineer and genial townsman told some years back, at the Annual Dinner of the West of Scotland Foremen Engineers' Association, that he had met an old gentleman who had the distinction of being the first passenger by the *Comet* and who had paid 4s. to sail from the Broomielaw to Dalmuir, a journey we can now make on a tramcar for 2½d.

Bell's enterprise had substantial results, for we learn that at the close of 1820—the last year of the steamer—a dividend of 37½ per cent. was declared, which may well make shareholders of to-day sigh for the good old days.

Bell, according to his own statement, was born at Torphichen Mill, near Linlithgow, on 7th April, 1767, and at the age of 16 became an apprentice millwright. He then took to ship modelling, after which he was engaged with Mr. James Inglis at Bell's Hill, "for the purpose," he says, "of gaining a thorough knowledge in the engineering." It was in 1800, when Bell was 33 years of age, that he applied to Lord Melville "on purpose to show his lordship and the other members of the Admiralty the practicability and great utility of applying

steam to the propelling of vessels against winds and tides, and every obstruction on rivers and seas, where there was depth of water." This effort to rouse powerful interest in his scheme failed. Three years later Bell made another similar effort, but the Admiralty had still no faith in the proposal. Lord Nelson's name must, however, be

Henry Bell.

mentioned here with honour. "My lords and gentlemen," said the illustrious admiral, "if you do not adopt Mr. Bell's scheme, other nations will in the end vex every vein of this empire." "It

will succeed," added the illustrious sailor, "and you should encourage Mr. Bell."

Bell was not to be discouraged. He communicated with Continental countries, and with the United States, and, in his own words, "the Americans were the first who put my plans into practice, and were quickly followed by other nations." Bell concluded his letter, dated Helensburgh, October, 1826, with these significant words :—

"I have not been an idle spectator on life's busy stage—that the mechanical world will be roused to a full conviction that such talents as my all-bountiful Creator vouchsafed to bestow upon me have been exercised for the public good; a little more fuel to my steam and from my country, and you and all the world will get it back again, I hope, with 50 per cent. additional."

In 1790 Bell had begun business on his own account, entering into partnership the following year with Mr. James Paterson, as builder, etc.

The treatment of Bell by the Government is not one on which we can reflect with pleasure. He received a miserable £200, and Brunel stated no more than the truth when he said :—"His scheming ended in Britain's steaming. This man

should have had a thousand pounds per annum twenty years ago for his great national services, and it is a stain upon the British Government for neglecting such a benefactor to his country."

Glasgow played a more generous and enlightened part. The Clyde Trustees first gave him an allowance of £50, and then increased it to £100 per annum for life, at his death continuing £50 per annum to his widow.

Bell died at Helensburgh on 14th November, 1830, in his sixth-fourth year. He was laid to rest in Row Churchyard, his funeral being attended by the Duke of Argyll, James Smith, Esq., of Jordanhill, and many others, the whole company numbering about 140. A monument was erected over his grave by Napier, the famous shipbuilder.

A life of Bell, by Edward Morris, was published by Blackie & Son in 1844, and is eloquently written :—"The ancient poets of Greece, Rome, and England," says the author, "with all their brilliant imagination and grasping conception, never could anticipate the triumphs which the steamboat has achieved on the vasty deep. Homer and Virgil, Shakespeare and Milton, Pope and Dryden, Cowper and Goldsmith, with all their powers of

language, had no figures of speech which could unfold the movements, or describe the splendour of those majestic palaces which cross the billowy ocean, and navigate the immense rivers of America, Canada, Egypt, India, and China, so that the flag of Britannia waves on every shore. From Bell's *Comet* of 1812 all these rovers of the deep had their birth; from the little craft of 10 to 15 horse-power to the leviathan of 1,000 horse-power. Their safety surpasses the mail coach on *terra firma*, and their swiftness will almost match that of the eagle."

From the Clyde yards go forth the greatest Atlantic liners, the smartest channel and river steamers, the fleetest sailing and the most luxurious steam yachts, and she is second to none in the construction of those Dreadnoughts and cruisers that constitute our "far-flung battle line."

In that delightful volume, "Backward Glances," the late Mr. James Hedderwick gives us an interesting picture of Henry Bell in his last years.

"Most of the immediate successors of the *Comet* were inconsiderable craft plying to the scattered watering-places on the Firth—Greenock, Dunoon, Largs, Rothesay, and the rest; and it was while

going coastward in one of these that my attention was directed to a little man on deck, who wore a long great-coat of blue serge, and whose face beamed with intelligence. This was no other than Henry Bell himself. He travelled in all steamers free, and had a pension from the Clyde Trust."

Chapman published his "Picture of Glasgow" in 1820, the year in which the *Comet* was lost, and in the work he gives a list of the steamboats then plying on the Clyde, as follows :—

FOR PASSENGERS.

"Glasgow,"	64 tons.
"Britannia," . . .	109 ,,
"Prince of Orange," . .	55 ,,
"Dumbarton Castle," . .	108 ,,
"Clyde,"	65 ,,
"Argyle,"	78 ,,
"Rothesay Castle," . .	95 ,,
"Albion,"	92 ,,
"Marion,"	57 ,,
"Defiance,"	51 ,,
"Waterloo," . . .	90 ,,
"Lord Nelson," . . .	93 ,,
"Neptune,"	82 ,,

FOR LUGGAGE.

"Trusty,"	88 tons.
"Industry,"	79 ,,
"Despatch," . . .	85 ,,
"Active,"	83 ,,

By 1835 the shipping of the Harbour of Glasgow had attained considerable proportions. Here is an abstract of the steam vessels in that year :—

Deep sea boats, .	Tonnage	3,203
Goods and passengers, .	,,	834
Passengers, . . .	,,	1,927
Luggage, ...	,,	470
Towing, ...	,,	257

Making up a total of 6,691 tons.

By 1826—14 years after the *Comet*—the *United Kingdom* was built by Mr. Napier, at a cost of £40,000. She was 160 feet in length, 26½ feet beam, with engines of 200 horse-power. By this time there were no fewer than 70 steam vessels belonging to the Clyde.

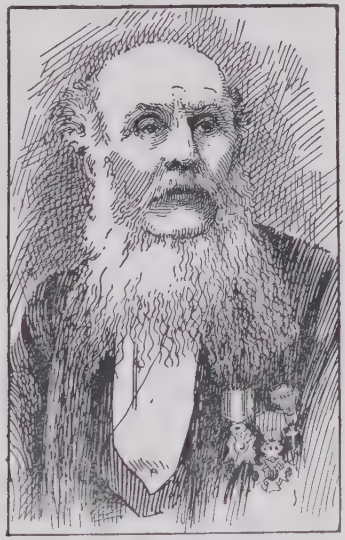
The *Comet* suggests the story of the rise and growth of the pleasure steamer on our river, the history of which has been so well told by Captain Williamson.

If Dumbarton showed a lamentable short-sightedness in the matter of dock construction, its shipbuilding reputation is only second to that of Glasgow. Long before the *Comet* was built Macmillans of Dumbarton, the oldest shipbuilding firm in the town, had gained a high reputation as builders of sailing ships.

The Castle or Rock of Dumbarton has a history, legendary and otherwise, of a very interesting kind. It is told that Satanus, at the time when St. Patrick was departing for Ireland, tore off a mass of Dumbreck Hill, casting it with a curse at the vessel in which the Saint sailed, with the wicked intent of sinking her, but Providence kept the Saint from danger, and the rock, falling at the point where the Leven passes into the Clyde, became known to history as the Castle Rock of Dumbarton. "Here John de Monteith, Sheriff of the town and Constable of the Castle in 1305, in which offices he was confirmed," says Chalmers, the author of "Caledonia," "after performing an odious service which has covered his name with infamy. It was he who placed the illustrious Wallace under the murderous axe of Edward I." Behind the rock now lies the famous shipbuilding yard of the Dennys

It was the Dennys who first followed up the work of steamer construction, and 13 years after the date of the *Comet* this firm launched the *Helensburgh.*

To William Denny belongs the honour of building the first sea-going steamer, the *Rob Roy.* This



Peter Denny, LL.D.

vessel first plied between Glasgow and Belfast, and then she was placed on the berth between Dover and Calais in the passenger trade. The engines were by David Napier. She was a vessel of 90 tons, the *Comet,* it will be remembered, being 25 tons.

No more worthy example than Napier can be

found of the qualities that have gone to build up the reputation of Glasgow among the cities of the world. It is said that he commenced business with £50, and gave £45 for a small blacksmith's business in the Gallowgate.

Alison tells a good story in his "Anecdotage of Glasgow." "The late Mr. Napier, of Shandon," he says, "the well-known shipbuilder, was one evening entertaining at his hospitable board a mixed company, which embraced distinguished representatives of the aristocracies of birth, wealth, and culture. An old gentleman, who happened to be present, alluded to the circumstance of the party being assembled on the fortieth anniversary of his wedding. His host politely corrected him, alleging that the previous day was the actual anniversary, and confirming his statement by a series of questions.

"You may remember," he said, "that after the ceremony you left Glasgow in a chariot and four by the road leading to Rutherglen, and about a mile beyond the boundaries of the city, after passing through a toll bar one of your leaders cast a shoe. Fortunately a smiddy was close at hand, and a youthful Vulcan came to the rescue, put on a fresh shoe, and you gave him half-a-crown."

"Possibly you may be right," the old gentleman replied, "but I have forgotten the incident."

"Not so, I," replied the honest shipbuilder, "for I was the young blacksmith."

We have referred to the name of William Denny. Relations of a very close kind had existed for centuries between Glasgow and Dumbarton, for up to 1700 our Dumbarton neighbours had uplifted rates from all vessels passing up the river to Glasgow. These rights were bought up at this date for 4,000 merks Scots, equal to £250 0s. 2d. sterling.

Trade between Dumbarton and Glasgow received a great impetus by Bell's invention, and in 1815 the Dumbarton Steamboat Company came into existence. The *Duke of Wellington*, a steamer of 12 horse-power, was the pioneer in this trade, making one run either way each day, the fares being first cabin 3s., second cabin, 2s.

We now come to glance at other famous names in the annals of the Clyde.

David Elder was born near Kinross in January, 1785. In 1817 he came to Glasgow as a mechanical engineer, and in 1821 he became manager of Robert Napier's Engine Works, then at Camlachie. About the year 1822 Mr. Napier contracted for his first

marine engine for a steamer called the *Leven*, to ply between Glasgow and Dumbarton, the contract being entrusted to David Elder. The tools used were very simple—a few 10-inch to 14-inch turning lathes with wooden shears and narrow pulleys and belts, a rude horizontal boring mill, and a small vertical boring machine almost made up the plant. The first double engine he designed was for the *Empress*, a vessel which sailed between Glasgow and Belfast, and then the engines for many of the well-known Cunard liners were made by him.

John Elder was born at Glasgow, 8th March, 1824, and educated at the High School, serving his apprenticeship of five years as engineer in the works of Robert Napier. Before 1849 he returned to Napier's to take charge of the drawing office. While there he assisted his father in the construction and equipment of some of the famous Cunard liners. In 1860 his firm added shipbuilding to their business, and in 1885 the firm became the Fairfield Shipbuilding and Engineering Company, Limited. The first steamer fitted with compound engines by Randolph, Elder & Co. was the screw steamer *Brandon*, which made her trial trip in July,

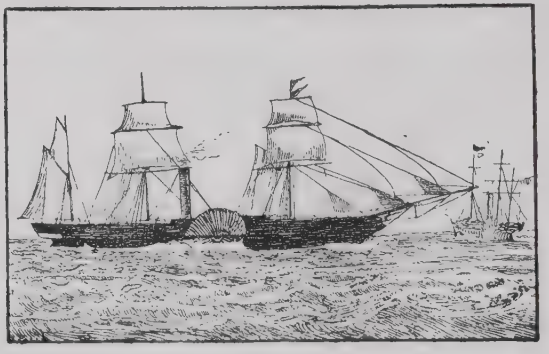
THE HARBOUR IN 1909. SIR THOMAS MASON.

(From a panel presented to the Clyde Trust by the Members.)

1884. The first ship in which engines of the same kind had their cylinders completely jacketed was the *Admiral*, built by Mr. J. R. Napier, and engined by Randolph, Elder & Co. in June, 1888. It is claimed for Elder "that, by his many inventions, particularly in connection with the compound engine, he effected a revolution in engineering second only to that accomplished by James Watt, and in great measure originated the developments in steam propulsion which have created modern commerce."

Still another distinguished pioneer in Clyde shipbuilding that must be mentioned was Professor William John Macquorn Rankine, who was appointed to the Chair of Civil Engineering and Mechanics in our University in 1855. Professor Rankine gave very special study to the science of naval architecture, and contributed most valuable papers to the Institution of Naval Architects on such subjects as "The Computation of the Probable Engine Power and Speed of Proposed Ships," "The Uneasy Rolling of Ships," and "A Proposed Method of Bevelling Iron Frames in Ships." In 1865 he published, in collaboration with Mr. James R. Napier, Mr. Isaac Watts, C.B., and Mr. F. K.

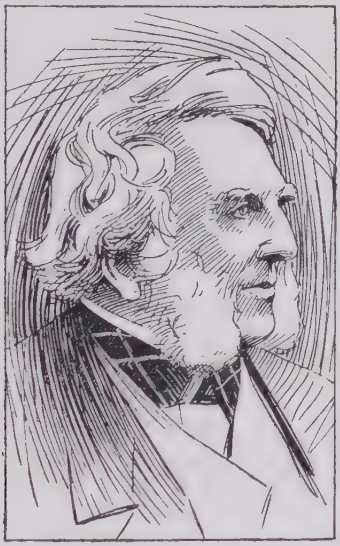
Barnes, of the Constructors' Department of the Royal Navy, a treatise on "Shipbuilding, Theoretical and Practical," which is recognised as a standard work. Rankine was presented, in recognition of his great services, with his bust at a Conversazione held in the Corporation Galleries on 19th August, 1870, by Mr. David Rowan, President of the Insti-



S.S. *Britannia.*

tution of Engineers and Shipbuilders in Scotland, and in making the presentation Mr. Rowan paid a high tribute to his scientific achievements, concluding with these words :—"Your name, and that of Clausens and Joule, and our distinguished friend, Thomson, will ever be associated with the science of thermo-dynamics, which has done so much towards explaining important laws of nature."

It was in 1818 that James and George Burns entered into partnership in Glasgow. Six years later they became owners, along with Mr. Hugh Matthie, of Liverpool, of six sailing vessels trading



Sir George Burns, Bart.

between Liverpool and Glasgow, and in that year they also inaugurated their trade with Belfast in steam. On 4th July, 1840, the *Britannia*, the first steamer of the famous Cunard Line, sailed from Liverpool for Halifax and Boston.

The Cunard Line began with four paddle wheel steamers of an aggregate tonnage of 4,602. Now

they own twenty steamers, with a tonnage of 238,037 tons.

The interval between the *Britannia* and the *Lusitania* is the history of the Atlantic steam trade.

The place of the Clyde in the Atlantic trade is worthy of special mention. Thomas Wingate, of Whiteinch, built the engines of the *Sirius*, the first steamer to cross the Atlantic.

In 1840 Robert Napier engined four Clyde-built steamers, the *Britannia*, *Arcadia*, *Caledonia*, and *Columba*, all for the famous Cunard Line, and built to perform the voyage in fourteen days.

The *Scotia*, built by Napier, followed 23 years later, and reduced the run to nine days.

The *City of Rome*, built by Tod & M'Gregor, took a day off this. Then the *Alaska*, built by Elder, took off still another day. Thomson achieved a voyage of six days with the *City of Rome*, and now we have the *Lusitania*, with 4 days 10 hours 41 minutes.

The history of Clyde steam shipbuilding from the days of the *Comet* to the new Cunarder, the contract for which has been secured by John Brown & Co., of Clydebank, is something every citizen may well be proud of. The *Comet* was

40 feet; the new Cunarder will be 900 feet, or 140 feet longer than the *Lusitania*. The offer of the builders to contribute a sum of £10,000 for river improvements is another sign that Clyde shipbuilders are second to none in the world for public-spirited enterprise. This sum will be devoted to the deepening and widening of the river at Clydebank.

While this great liner is not to be built for speed, yet her passenger accommodation will be unsurpassed in space and luxury. She will carry about 4,000 passengers (while the *Comet* carried 40), and with her crew there will be accommodation for 5,000. According to the *Glasgow Herald* of 7th January, 1911, she will probably surpass the *Mauretania* and the *Lusitania* in luxurious equipment, lavish fittings, and the general excellence of the arrangements for the comfort of passengers.

In an earlier part of this story a reference was made to the "elegance and comfort" of the *Comet*. What would Henry Bell think if he saw a steamer in which there will be suites of rooms, many single berths, and family suites, fitted most luxuriously; a passenger lift, complete telephone system, a system of electric bells, Turkish and electric baths, printing

outfit, confectionery, a swimming pond, and a theatre?

The year 1910 marks the highest point in trade on the river. It also saw the occupancy of the new quay and basin at Yorkhill, while accommodation has been provided at Meadowside for the trade in grain and fruit. During the last 20 years the tonnage of vessels has risen from 6 million to 12 million, while an equal advance has been made in goods, which stand at 10 millions, as compared with 5 millions 20 years ago.

The Clyde, according to the *Glasgow Herald's* Annual Review for 1910, "again had to its credit a larger number of vessels, a larger tonnage, and a larger horse-power than any nation in the world apart from the United Kingdom"—viz., 358 vessels, with an aggregate of 392,392 tons and 593,840 horse-power.

The leading place in the world's list of output during 1910 in marine engines was taken by the Fairfield Shipbuilding Company, with the stupendous total of 100,200 tons.

We shall conclude this very fragmentary study of a great subject by a quotation from *Glasgow in* 1901, published by James Hamilton Muir, and

illustrated by that distinguished Glasgow artist, Mr. Muirhead Bone.

"Your train is gliding now through the squalid part of the city; then it slackens speed, and as you yawn and collect your wraps, it rumbles out on a bridge, the darkness lights again, and for a moment of time a vision lies before you, seen through the twinkling lattice of the girders. It is of a short reach in a river, of water coloured a faint greenish-bronze, of a dusky West Highland sunset lingering overhead, where shreds of clouds are drifting into nests for the night, of huddled silhouettes of vessels moored in mid-stream, or coaling at wharves, of brown smoke and sudden lights blinking out along the quays, and dulling sky and water to the mellow chiaro-oscuro of an old painting. For a moment it hangs before you, dreamy, yet work-a-day, instinct with the modern poetry of night fallen on unended labours. Another moment and your train rumbles over the bridge, and a swarming, nocturnal city leaps up on every hand to welcome you.

"It is the Clyde you have seen, and where the faded sunset leads is the way to the Hebrides. Far down, where the river becomes firth, vessels

are pitching in a freshening breeze against the same late-lingering sunset; lochs are sinking back into their mists for the night, and grey, weary miles of sea are heaving between Bute and Campbeltown. The 'Wan Water' of Clyde is to the native heart inexpressibly, unreasonably dear. It is the narrow way out of toil and labour, the 'world elsewhere,' the casement opening on seas of adventure and romance."

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